NOTES.

I.

Historical Data concerning the Discovery of the Law of Valence.

At page 89 of the Journal, reference was made to an editorial notice in *Nature* (March 14, 1875.) The date should have been February 14, and the article is of too great historical interest in connection with the Chemico-Algebraical Theory to be exposed to the chances of being overlooked. It reads as follows:

"In his interesting communication on the analogy between chemistry and algebra in our last number, Professor Sylvester attributes the conception of *valence* or *atomicity* to Kekulé. No doubt the theory in its present developed form owes much both to Kekulé and Cannizaro; indeed, until the latter chemist had placed the atomic weights of the metallic elements upon a consistent basis, the satisfactory development of the doctrine was impossible. The first conception of the theory, however, belongs to Frankland, who first announced it in his paper on Organo-metallic Bodies, read before the Royal Society on June 17th, 1852. After referring to the habits of combination of nitrogen, phosphorus, antimony and arsenic, he says: 'it is sufficiently evident, from the examples just given, that such a tendency or law prevails, and that, no matter what the character of the uniting atoms may be, *the combining power of the attracting element*, if I may be allowed the term, *is always satisfied by the same number of these atoms.*' He then proceeds to illustrate this law by the organo-compounds of arsenic, zinc, antimony, tin, and mercury. In conjunction with Kolbe, Frankland was also the first to apply this law to the organic compounds of carbon; their paper on this subject, bearing date December, 1856, having appeared in Liebig's *Annalen* in March, 1857, whilst Kekulé's first memoir, in which he mentions the tetrad functions of carbon, is dated August 15th, 1857, and was not published until November 30th in the same year. Kekulé's celebrated paper, however, in which this application of the theory of atomicity to carbon was developed, is dated March 16th, 1858, and was published on May 19th, 1858. On the other hand, the "chemicographs" or graphic formulæ, which Professor Sylvester has so successfully applied to algebra, were the invention of Crum Brown, although Frankland has used them to a much greater extent than any other chemist."